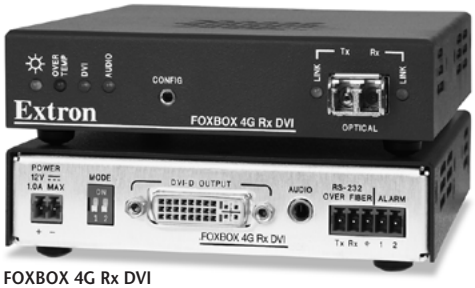
FOXBOX 4G DVI

FIBER OPTIC EXTENDER FOR DVI, AUDIO, AND RS-232

- Extends DVI, stereo audio, and RS-232 control signals long distances over a single fiber
- All digital, zero compression technology for high performance signal transmission
- Pixel-for-pixel image quality, up to 1600x1200, including HDTV 1080p/60
- Daisy-chain capability
- Available as 850 nm multimode and 1310 nm singlemode models
- Real-time status LED indicators for troubleshooting and monitoring
- Alarm notification for fiber link loss
- Auto Input Memory
- Low profile, mountable enclosures

FOXBOX 4G Tx DVI



FOXBOX 4G Rx DVI

The Extron FOXBOX 4G DVI Fiber Optic Extender is a transmitter and receiver set for long haul transmission of DVI, audio, and RS-232 control signals over a single fiber. Engineered for reliability and exceptional high resolution image performance, it uses Extron's exclusive all digital, zero compression technology, and also includes a host of features for enhancing A/V system integration.

DESCRIPTION

The Extron **FOXBOX 4G DVI** Fiber Optic Extender is a transmitter and receiver set for long haul transmission of DVI, audio, and RS-232 control signals over a single fiber. Engineered for reliability and exceptional high resolution image performance, it uses Extron's exclusive all digital, zero compression technology, to deliver perfect pixel-for-pixel transmission of computer-video images up to UXGA (1600x1200) resolution, including HDTV 1080p/60. Designed specifically for A/V systems, the FOXBOX 4G DVI also includes a host of integrator-friendly features such as an EDID emulation mode, auto input memory, RS-232 control from multiple locations, internal test patterns, and real-time system monitoring. Compact, low profile enclosures allow for discreet installation behind a flat-panel display, and multiple receivers can be daisy-chained.

The FOXBOX 4G DVI is ideal for a wide range of applications requiring long distance transmission of high resolution content with the highest quality. Because transmission of content is inherently secure and immune to outside interference, fiber applications are favored in government, military, and medical environments. The FOXBOX 4G DVI transmitter and receiver feature industry standard LC-type connectivity.

The FOXBOX 4G DVI MM supports multimode fiber at 850 nm, which is typically used within buildings or facilities with moderate-range transmission distances up to 150 meters (492 feet). The FOXBOX 4G DVI SM supports singlemode as well as multimode fiber at 1310 nm. Singlemode fiber offers long-range transmission capability over extreme distances of up to 30 km (18.75 miles). It is used in very large facilities such as airports and stadiums, as well as connecting over very long distances between facilities such as university campuses.

The FOXBOX 4G DVI transmitter accepts and digitizes unbalanced stereo audio and RS-232 control signals, and transmits them along with the DVI-D signals. An EDID emulation mode ensures that the transmitter properly communicates with the DVI source. Several FOXBOX 4G DVI receivers may be daisy-chained to support applications with displays in multiple locations.

At the FOXBOX 4G DVI transmitter, both transmitter and receiver can be controlled and configured through RS-232. With a second fiber link installed, functions for both units can be controlled at either location. Since the units are typically situated far apart, this capability adds considerable versatility, enabling adjustment and calibration of audio at the receiver. It also allows for verification of fiber link status between the units as well as the presence of DVI-D and audio input signals at the transmitter.

DVI-to-Analog RGB and Analog RGB-to-DVI Conversion

The FOXBOX 4G DVI transmitter and receiver are available separately. Either device can be paired with the FOXBOX 4G VGA transmitter or receiver to provide ultra-long distance transmission and conversion of DVI-D signals to analog RGB and vice versa.

The FOXBOX 4G DVI receiver is also compatible with the FOX 500 and the FOX 500 DA6 Six Output Fiber Optic Transmitter, which enables transmission of analog RGB over up to six fiber links for distribution to multiple DVI-equipped displays.

FEATURES

- **Extends single link DVI-D, stereo audio, and RS-232 control signals very long distances over a single fiber**
- **All digital, zero compression technology provides pixel-for-pixel performance with signals up to 1600x1200, including HDTV 1080p/60**
- **Daisy-chain capability** – Several FOXBOX 4G DVI receivers can be daisy-chained so that displays in multiple locations can be served from a single transmitter.
- **Available as an 850 nm multimode model for moderate-range transmissions, and a 1310 nm singlemode model for extreme distances up to 30 km (18.75 miles)**
- **Real-time status LED indicators for troubleshooting and monitoring** – LEDs on the transmitter and receiver front panels verify the presence of DVI and audio signals at the transmitter as well as active fiber links between the units. Requires second fiber link.
- **Alarm notification for fiber link loss** – The FOXBOX 4G DVI can be set up to trigger an external control system for immediate notification when a fiber link has been lost. Requires second fiber link.
- **Auto Input Memory** – When activated, the FOXBOX 4G DVI receiver automatically stores position and detail information based on the incoming signal. When the same signal is detected again, these image settings are automatically recalled from memory.
- **EDID emulation mode** – The FOXBOX 4G DVI transmitter provides a means for specifying the rate of the incoming DVI signal through the RS-232 serial port. EDID emulation mode allows proper communication with the DVI source.
- **Industry standard LC connectors provide reliable physical connectivity and precise fiber core alignment**
- **30 user memory presets** – In addition to Auto Memory, 30 user memory presets on the FOXBOX 4G DVI receiver are available for saving and recall of position and detail information for multiple incoming sources. The ability to save and recall presets is useful in switcher-based environments.
- **Audio gain & attenuation adjustment and muting capability**
- **RS-232 serial control at transmitter and receiver** – The FOXBOX 4G DVI transmitter and receiver feature RS-232 serial ports for control and configuration.
- **Internal test patterns for calibration and setup** – Three test patterns are available, including grayscale, color bars, and alternating pixels.
- **Compatible with FOXBOX 4G VGA and FOX 500 transmitter and receiver, and FOX 500 DA6 transmitter/distribution amplifier** – Enables ultra-long distance DVI-to-analog RGB and analog RGB-to-DVI conversion without the need for extra signal conversion devices.
- **1" (2.5 cm) high, quarter rack width metal enclosures** – With a low profile enclosure, both devices can be discreetly installed, such as behind a plasma or LCD flat-panel display.
- **External universal power supply included** – Provides worldwide power compatibility

NOTE: These transceivers are class 1 laser products. They meet the safety regulations of IEC-60825, FDA 21 CFR 1040.10, and FDA 21 CFR 1040.11.

OPTICAL FIBER INTERCONNECTION between transmitter and receiver

Number/type ..... 1 or 2 fiber optic
Connectors ..... 2 LC connectors
Operating distance
- Singlemode ..... 30 km (18.75 miles) with singlemode (SM) cables with a FOXBOX 4G SM
- Multimode ..... 300 m (985') with 62.5 µm multimode (MM) cables with a FOXBOX 4G MM
  1 km (3280') with 50 µm multimode (MM) cables with a FOXBOX 4G MM
  2 km (6561') with 50 µm 2000 MHz bandwidth laser optimized multimode cable with a FOXBOX 4G MM

NOTE: Operating distance is approximate. These are typical maximum distances that may vary depending on factors such as fiber type, fiber bandwidth, connector splicing, losses, modal or chromatic dispersion, environmental factors, and kinks.

Nominal peak wavelength ..... 850 nm for FOXBOX 4G MM, 1310 nm for FOXBOX 4G SM
Data rate ..... 4.25 Gbps
Transmission power
- Singlemode ..... -5 dBm, typical
- Multimode ..... -5 dBm, typical

Maximum receiver sensitivity
- Singlemode ..... -18 dBm, typical
- Multimode ..... -12 dBm, typical

Optical loss budget
- Singlemode ..... 13 dB, maximum
- Multimode ..... 7 dB, maximum

VIDEO — FOXBOX 4G TX/RX DVI

NOTE: *Appropriate DVI-D to HDMI cables or adapters are required for HDMI signal input/output.

NOTE: The FOXBOX 4G DVI Series can be used to distribute HDMI signals if you use a DVI-to-HDMI adapter. However, when using HDMI signals, these units do not transmit audio and CEC signals.

Resolution range ..... Up to 1600x1200 or 1080p @ 60 Hz pixel for pixel; higher resolutions up to 1920x1200 @ 60 Hz, undersampled
Formats ..... RGB and YCbCr digital video
Standards ..... DVI 1.0, HDMI 1.2

VIDEO INPUT — FOXBOX 4G TX DVI

Number/signal type ..... 1 single link DVI-D (or HDMI*)
Connectors ..... 1 female DVI-I

VIDEO OUTPUT — FOXBOX 4G RX DVI

Number/signal type ..... 1 single link DVI-D (or HDMI*)
Connectors ..... 1 female DVI-I
Nominal level ..... 0.8 Vp-p
Video delay ..... 1-2 frames

AUDIO

Gain
- Range ..... Adjustable, -18 dB to +10 dB
- Default ..... Unbalanced output: 0 dB

Frequency response ..... 20 Hz to 20 kHz, ±0.5 dB
THD + Noise ..... 0.10% @ 1 kHz at nominal level
S/N ..... >80 dB at maximum output (unweighted)
CMRR ..... 65 dB @ 20 Hz to 20 kHz
Audio bits per sample ..... 18 bits per channel, 2 channels (L, R)
Sampling rate ..... 48 kHz

AUDIO INPUT — TRANSMITTER

Number/signal type ..... 1 unbalanced stereo or 2 unbalanced mono
Connectors ..... (1) 3.5 mm mini stereo jack
Impedance ..... 18k ohms unbalanced, DC coupled
Nominal level ..... -10 dBV (316 mVrms)
Maximum level ..... +8.9 dBV, (unbalanced) at 1% THD+N
NOTE: 0 dBu = 0.775 Vrms, 0 dBV = 1 Vrms, 0 dBV ≈ 2 dBu

AUDIO OUTPUT — RECEIVER

Number/signal type ..... 1 unbalanced stereo or 2 unbalanced mono
Connectors ..... (1) 3.5 mm mini stereo jack
Impedance ..... 50 ohms unbalanced
Nominal level ..... -10 dBV (316 mVrms)
Maximum level (Hi-Z) ..... +7.6 dBu, unbalanced at 1% THD+N
Maximum level (600 ohm) ..... >+6.3 dBu, unbalanced at 1% THD+N
Audio delay ..... 1.5 frames

CONTROL/REMOTE

Serial control ports on each unit (transmitter and receiver)
- Control ..... 1 RS-232, 2.5 mm mini stereo jack (front panel)
- Pass-through ..... 1 RS-232, 3.5 mm captive screw connector, 5 pole (3 pins are used) (rear panel)

Baud rate and protocol
- Control ..... 9600 baud, 8 data bits, 1 stop bit, no parity
- Pass-through ..... 9600 to 115,200 baud

Program control ..... Extron's control/configuration program for Windows®
Extron's Simple Instruction Set (SIS™)

GENERAL

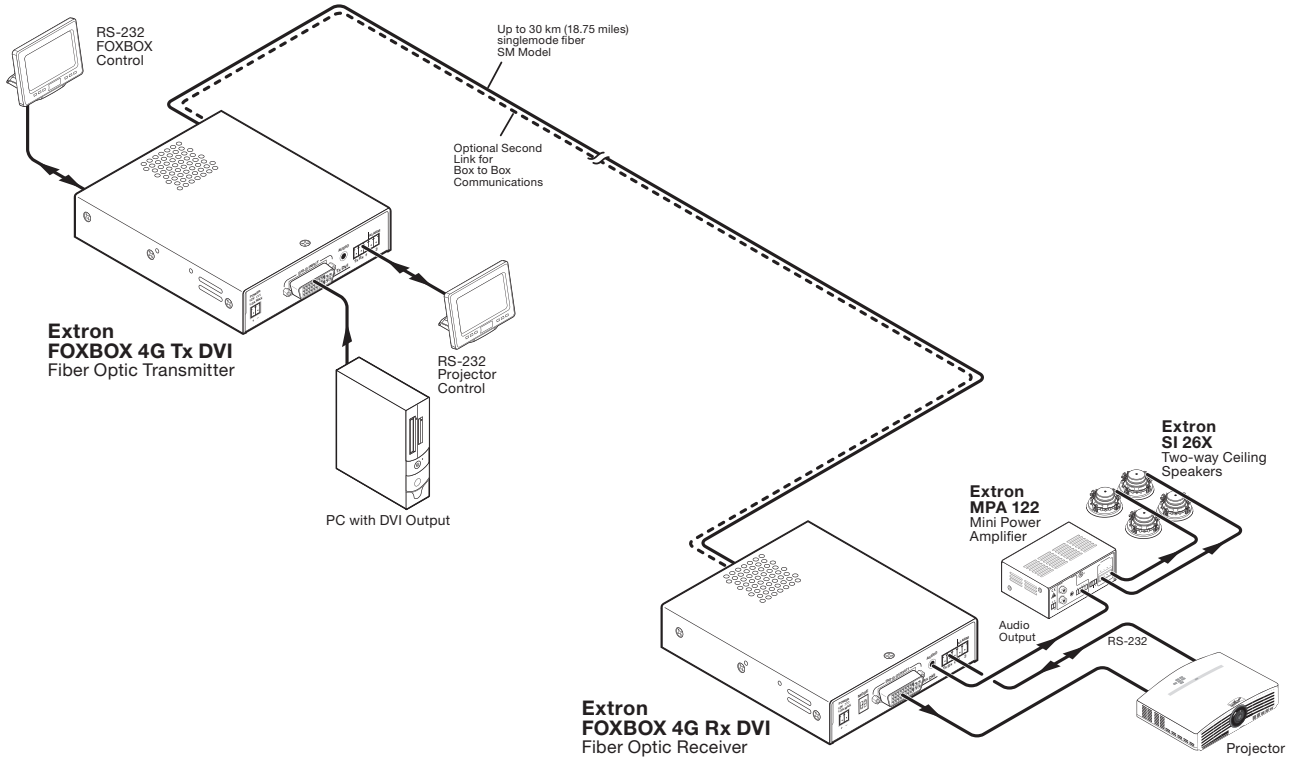
External power supply ..... 100 VAC to 240 VAC, 50-60 Hz, external; to 12 VDC, 1 A, regulated
Power input requirements ..... 12 VDC, 0.6 A
Cooling ..... Convection, vents on top and side panels
Mounting
- Rack mount ..... Yes, with optional rack shelf
- Furniture mount ..... Yes, with optional under desk mounting kit

Enclosure type ..... Metal
Enclosure dimensions ..... 1.0" H x 4.3" W x 6.0" D (quarter rack wide) (2.5 cm H x 10.9 cm W x 15.2 cm D) (Depth excludes connectors.)
Product weight ..... 0.7 lbs (0.3 kg) per unit, 1.4 lbs (0.6 kg) per pair
Shipping weight ..... 3 lbs (2 kg) per unit, 6 lbs (3 kg) per pair
Vibration ..... ISTA 1A in carton (International Safe Transit Association)
Regulatory compliance
- Safety ..... CE, CUL, FDA Class 1, UL
- EMI/EMC ..... CE, C-tick, FCC Class A, ICES, VCCI

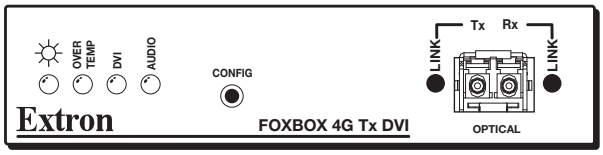
MTBF ..... 30,000 hours
Warranty ..... 3 years parts and labor
NOTE: All nominal levels are at ±10%.
NOTE: Specifications are subject to change without notice.

Model	Version Description	Part number
FOXBOX 4G Tx DVI MM	Multimode - Transmitter	60-935-11
FOXBOX 4G Rx DVI MM	Multimode - Receiver	60-935-21
FOXBOX 4G Tx DVI SM	Singlemode - Transmitter	60-935-12
FOXBOX 4G Rx DVI SM	Singlemode - Receiver	60-935-22

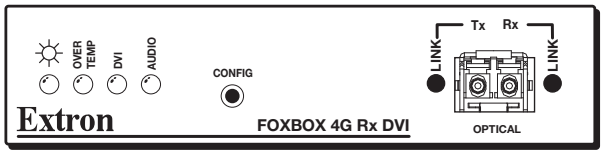
APPLICATION DIAGRAM



PANEL DRAWINGS



FOXBOX 4G Tx DVI - Front



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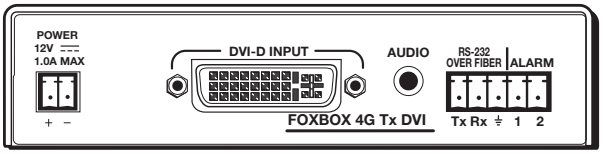

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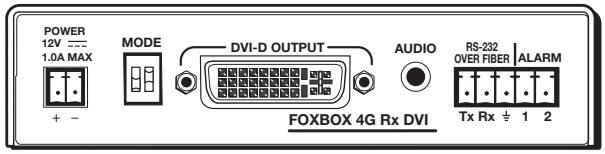

FOXBOX 4G Rx DVI - Back

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